AMI

American Megatrends, Inc.

Extended Industry
Standard Architecture
EISA
Configuration Utility

User's Guide

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1.1 Introduction to EISA

The Extended Industry Standard Architecture Configuration Utility is a software utility for the configuration of EISA computers. Delivered with all EISA machines, the EISA Configuration Utility automatically generates conflict-free configuration information for the system, and provides information to the user for the correct setting of switches and jumpers on older-design ISA cards.

The Problem

In the ISA architecture, one of the biggest challenges faced by a user is configuring the computer. The computer must be configured when it is initially set up and any time hardware is added to or removed from the system. This often requires reading several manuals to find the information needed to correctly set switches and jumpers as well as learning new concepts such as I/O addresses and interrupt levels. Once the user has configured the computer, the only way to know if it is configured correctly is to plug all the boards in and see if everything works. If not, there is usually little to assist the user in resolving the problem.

The Solution

In the new EISA architecture, option boards are designed without switches or jumpers. Configuration is achieved through a series of initialization commands that are stored in nonvolatile memory. The EISA Configuration Utility determines the configuration, creates the initialization commands, and ensures that the configuration is correct. If a conflict free configuration is not possible, the user is notified immediately.

At system power-up time, the EISA system ROM downloads system initialization information from nonvolatile memory to the slot-specific I/O addresses for each EISA board to declare system resource use and other manufacturer-defined options. For EISA boards, this port initialization process is automated, and it replaces the switch and jumper setting method used for ISA boards.

One advantage of EISA is the ability to accept existing ISA boards. The expansion bus of an EISA computer is defined to be a superset of the Industry Standard Architecture and maintains full upward compatibility for option boards originally designed for 8 and 16 bit ISA computers. Boards designed for the ISA architechture containing switches and jumpers can coexist with software programmable boards in an EISA system. In addition to generating initialization information for EISA boards, the EISA Configuration Utility is able to determine the switch settings for any ISA board in a system if a corresponding ISA CFG file is supplied.

Configuration (CFG) and Extension (OVL) Files

Each option board in an EISA system has a corresponding configuration file (CFG) that describes the characteristics and the required system resources of that board. The EISA Configuration Utility uses the information from the CFG files to create a conflict-free configuration.

Despite the extensive flexibility of the format of the CFG file, there may be times when the Configuration Utility can not support all possible configuration options. Therefore, executable code in the form of an OVL file can be integrated into the Configuration Utility's processing. This allows further customization of the configuration process for any unusual board specific needs, such as determining system equipment, fixed disks, coprocessors, floppy drives, system passwords, and other special devices.

System Configuration Information Files (SCI)

The EISA Configuration Utility has the ability to create configuration information files which can later be used on another computer. These files are named with the SCI extension. In addition, the SYSTEM.SCI file is maintained by the Configuration Utility as a backup for the computer's EISA nonvolatile memory.

When the Configuration Utility is first executed, it determines if the nonvolatile memory information is valid. If the nonvolatile memory information is invalid, the configuration may be restored by loading an SCI file from the configuration disk or by manually selecting CFG files and assigning them to slots.

1.2 Starting the Utility

This utility runs on any ISA or EISA computer using MS-DOS version 3.2 or later. A minimum of 640 Kbytes of memory and a 1.2 megabyte diskette drive are required. A mouse is also recommended to move the cursor and to select options within the utility.

To start the utility, insert the System Configuration diskette in drive A. Then, turn on your computer. If your computer is already on, hold down [Ctrl] and [Alt], and press [Del] at the same time. A logo screen will be displayed. Press any key to display a welcome screen. Press [Enter] to leave the welcome screen and display the main menu. Refer to Section 2, "Command Reference," for instructions on using the menu and a description of the menu selections.

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2.1 Using the Main Menu and Submenus

There are two ways to choose a menu selection from the main menu: using the keyboard and using a mouse.

To choose a menu selection using the keyboard, use the up and down arrow keys to position the cursor on the desired menu selection and press [Enter].

To choose a menu selection using a mouse, position the mouse cursor over the desired selection on the menu and click the left button on the mouse.

Using the submenus

Five pull-down menus can be used when you choose the Configure Computer - Advanced Method selection (for menu options see MAIN MENU SELECTIONS section in this guide). These menus are listed in the menu bar at the top of the screen. There are three ways to use the pull-down menus:

Using the keyboard

To make menu selections using the keyboard, follow these steps:

1. Press the [F10] key to place the cursor on the menu bar.

2. Use the [left arrow] and [right arrow] keys to position the cursor on the desired pull-down menu name.

3. Press the [Enter] key to display the pull-down menu.

4. Use the [up arrow] and [down arrow] keys to position the cursor on the desired pull-down menu item.

5. Press the [Enter] key to execute the pull-down menu item. If the menu item ends in an ellipsis (...), a dialogue box will be displayed to prompt you for further information; otherwise, the menu item will be executed directly.

Using enhanced letters

Each pull-down menu listed on the menu bar and each item on the pull-down menus have a single enhanced letter. To make a selection using enhanced letters, follow these steps:

1. Press and hold down the [Alt] key while pressing the enhanced letter for the desired pull-down menu. The pull-down menu is displayed.

2. Press the enhanced letter that corresponds to the desired menu item to execute the menu item. If the menu item ends in an ellipsis (...), a dialogue box will be displayed to prompt you for further information; otherwise, the menu item will be executed directly.

Using a mouse

To make menu selections using a mouse, follow these steps:

1. Place the mouse cursor over the desired pull-down menu name on the menu bar and click the left button on the mouse. The pull-down menu is displayed.

2. Place the mouse cursor over the desired pull-down menu item and click the left button on the mouse to execute the menu item. If the menu item ends in an ellipsis (...), a dialogue box will be displayed to prompt you for further information; otherwise, the menu item will be executed directly.

2.2 Using Dialogue Boxes

When you select a menu item that ends in an ellipsis (...), a dialogue box will be displayed to prompt you for further information. There are two ways to use a dialogue box:

Using the keyboard

To move within a dialogue box using the keyboard, follow these guidelines:

1. Press [Tab] to move to the next field or area.

2. Press [Shift+Tab] to move to the previous field or area.

3. Use the arrow keys to move between items in a list.

4. Press the space bar to turn a check box on or off.

5. Press the [Enter] key to select.

6. Press [Esc] to cancel the dialogue box.

Using a mouse

To move within a dialogue box using a mouse, follow these guidelines:

1. Place the mouse cursor over the desired choice in the dialogue box and click the left button.

2. Place the mouse cursor on a check box and click the left button to turn the check box on and off.

3. Place the mouse cursor on a button and click the left mouse button.

2.3 Using Screens

When your configuration is displayed in an overview or a detailed view, use the following methods to move the cursor:

Using the keyboard

To move the cursor on the screen using the keyboard, follow these guidelines:

1. Press [Tab] to move to the next option.

2. Press [Shift+Tab] to move to the previous option.

3. Press [Ctrl+Home] to move to the beginning of the information.

4. Press [Page Down] to move down one screen.

5. Press the [down arrow] key to move down one line.

6. Press [Page Up] to move up one screen.

7. Press the [up arrow] key to move up one line.

8. Press [Ctrl+End] to move to the end of the information.

Using a mouse

To move the cursor on the screen using a mouse, follow these guidelines:

1. Place the mouse cursor over the desired area on the screen and click the left button.

2. If a scroll bar is displayed on the right side of the screen, place the mouse cursor on the arrow symbol at the top or bottom of the scroll bar and press the left button.

2.4 Getting help

An information line is displayed on the last line of your screen. This line contains a list of the keys you can use.

You can get help about a selection on a menu or any object on a screen by pressing the [F1] key while your cursor is on the selection or object. You can also display help from the help topics index by selecting Help topics from the Help pull-down menu or by pressing [Shift+F1].

For a complete list of key combinations, press [Shift+F1] to display the help topics index. Then use the arrow keys to select "How to Use Keys" and press [Enter].

2.5 Main Menu Selections

Learn about configuring your computer - This selection will display an overview of how to use this utility to configure your computer.

Configure computer - When you choose this selection, a menu is displayed with the following selections:

- Copy configuration (CFG) files
- Configure computer - basic method
- Configure computer - advanced method
- Return to the main menu

Copy configuration (CFG) files - This selection copies configuration (CFG) files from an OPTION CONFIGURATION diskette or the Configuration File Library to your System Configuration diskette. You need to copy a CFG file for each board or option you plan to install BEFORE you configure your computer.

Configure computer - basic method - This selection will guide you through the procedure for adding boards and options to your computer. When you choose this selection, a graphical overview of the boards and options installed in your computer is displayed on the screen. When there are no resource conflicts, the configuration information is saved in a system configuration information (SCI) file. If you need to change functions, edit resources or perform advanced tasks, use the advanced method.

Before you return to the main menu, a list of the switch, jumper, and software settings which you need to change for ISA boards can be displayed. Either write them down or print them if you have a parallel printer attached to your computer. If you do not have a CFG file for an option or board you want to install, use the instructions provided with the option to install it.

Configure computer - advanced method - When you choose this selection, a graphical overview of the boards and options installed in your computer is displayed on the screen. A menu bar is displayed at the top of the screen, which you use to access pull-down menus.

This selection allows you to enter configuration information about your computer through the use of pull-down menus (see MENU BAR SELECTIONS for pull down menu option functions). As you enter information, the entries are verified (when Auto Verify is on (default)). If any resource conflicts are found, you are allowed to correct the errors by changing function and resource choices. When there are no resource conflicts, the configuration information is saved in a system configuration information (SCI) file.

2.6 Menu Bar Selections

Before you return to the main menu, a list of the switch, jumper, and software settings, which you need to change for ISA boards, can be displayed. Either write them down or print them if you have a parallel printer attached to your computer. If you do not have a CFG file for an option or board you want to install, use the instructions provided with the option to install it.

Return to main menu - This selection will return you to the main menu.

Set date and time - This selection allows you to set your computer's date and time. Once you set the date and time, your computer will keep track of it, even if the power is turned off.

Exit from this utility - This selection exits the utility. The system will reboot. If you do not have an operating system installed on your fixed disk, replace the System Configuration diskette in the diskette drive with your operating system diskette.

Pull-Down Menu Selections

Menu Bar Selection: System

Selection:	Function:
New	Creates a new configuration and system configuration information (SCI) file for a computer (available in non-target modeling mode only).
Open	Opens an existing system configuration information (SCI) file for editing.
Save As	Makes a backup copy of the current configuration choices in a specified system configuration (SCI) file.
Print	Prints configuration information about the current option or the entire configuration on a printer.
Verify	Verifies that the computer is correctly configured (the configuration is free of system resource conflicts.)
Exit	Prompts to either view the settings of the boards and options, save the configuration and exit, or exit without saving any changes. If the configuration has changed and is saved, the computer will reboot instead of exiting to the menu.

Menu Bar Selection: Edit

Selection:	Function:
Add	Adds a selected board or option to the current configuration.
Move	Selects the current board and moves it to a selected available slot.
Remove	Selects the current board and removes it from the current configuration.
Change Function	Selects the current function and allows you to change the function choice. Only available when the detailed view is active.
Change Resource	Selects the current function and allows you to change the system resources for the function. Only available when the detailed view is active.
Revert to Saved	Reverts any changes except deletions and additions back to last saved choices.
Reset to Defaults	Sets all choices for the current board or the entire configuration to the manufacturer's default choices.
Lock	Secures all choices for the current board or the entire configuration to the current selections.
Unlock	Unlocks all choices for the current board or the entire configuration.

Menu Bar Selection: View

Selection:	Function:
Overview	When selected, displays a general overview of the configuration.
Detailed by Slot	When selected, displays a detailed view of the configuration sorted by slot.
Detailed by Type	When selected, displays a detailed view of the configuration sorted by type of function.
Switch and Jumper Settings	Selects the current board or option and displays information about its switches and jumpers.
Software Parameters	Selects the current board or option and displays information about software drivers.
Connections	Selects the current board or option and displays information about its external cable connections.
Board Specifications	Selects the current board or option and displays information about identification and physical characteristics.
Resources	Selects the current board or function and displays system resource summary information.

Menu Bar Selection: Settings

Selection:	Function:
Auto Verify	When selected, your computer's configuration is checked for resource conflicts each time you change the configuration. Selecting Auto Verify turns Manual Verify off.
Manual Verify	When selected, your computer's configuration is not checked for resource conflicts. You must select Verify from the System pull-down menu to check your computer's configuration. Selecting Manual Verify turns Auto Verify off.

Menu Bar Selection: Help

Selection:	Function:
Help Topics	Displays an index of help topics which can be displayed on your screen.
Help	Displays help information about the currently selected board, option, or function. This menu item performs the same function as pressing the [F1] key.
How to Use Keys	Displays a list of the key sequences which can be used.
How to Use Help	Displays information about using help.
Copyright Information	Displays copyright information about this utility.

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Appendix A Starting the Utility From a Fixed Disk

It is recommended that you start this utility from the System Configuration diskette. However, if you have MS-DOS installed on your fixed disk, you can start the utility from your fixed disk. Starting the utility from your fixed disk allows you to customize the utility through the use of command line parameters.

Installing the Utility on a Fixed Disk

Before you can start the utility from your fixed disk, you must copy the utility files to your fixed disk. To copy the files, insert the System Configuration diskette in drive A and enter:

COPY A:*.* [d:][path]

where:

d: is the fixed drive that will contain the utility files

path is the path on the fixed drive that will contain the utility files

Starting the Utility

To run the utility, type the following command followed by [Enter]. Note that items in brackets are optional and only the information within the brackets is entered.

[d:][path]SD [/A] [/B] [/H] [/K] [/M]

where:

d: is the drive which contains the utility files

path is the path to the utility files

/A Expanded mode - Provides an expanded set of menus with additional functionality. This mode may also be activated by pressing **<CTRL-A>** instead of **[Enter]** when the "Welcome" screen is displayed.

/B BIOS video mode - This parameter causes all screens to be displayed using BIOS Int 10h calls. This parameter should be used on computers with non-standard displays. The default mode is to write directly to video memory.

/H High resolution display - If you have an EGA monitor, the utility will be displayed in 43-line mode. If you have a VGA monitor, the utility will be displayed in 50-line mode. When this parameter is not used, 25 lines will be displayed on your screen.

/K Keyboard only mode - If this parameter is used, the computer will not support the use of a mouse device even if one is present. The default is to support a mouse if its driver is loaded.

/M Monochrome display - This parameter causes the utility to display the screens in black and white. Color will not be used.

When the utility begins, a logo screen will be displayed. Press any key to display a "Welcome" screen. Press [Enter] to leave the "Welcome" screen and display the main menu. Refer to Section 2, "Command Reference," for instructions on using the menu and a description of the menu selections.

Appendix B Starting the Configure Computer Selection From a Fixed Disk

You can bypass the main menu and start the Configure Computer selection directly from MS-DOS. This allows you to use command line parameters to customize the operation of the utility. You must have MS-DOS and this utility installed on your fixed disk. Refer to Appendix A for instructions on installing this utility on your fixed disk.

Use the following format to type the command that starts this selection from MS-DOS. Note that items in brackets are optional and only the information within the brackets is entered.

[d:][path]CF [/B] [/E] [/F] [/H] [/K] [/M] [/N] [/T]

where:

d: is the drive which contains the utility files

path is the path to the utility files

/B BIOS video mode - This parameter causes all screens to be displayed using BIOS Int 10h calls. This parameter should be used on computers with non-standard displays. The default mode is to write directly to video memory.

/E Easy configuration operation - Starts the utility in Basic Method.

/F Fast configuration operation - This is the automatic configuration mode. The utility will determine the boards and options and configure the system without user assistance.

/H High resolution display - If you have an EGA monitor, the utility will be displayed in 43-line mode. If you have a VGA monitor, the utility will be displayed in 50-line mode. When this parameter is not used, 25 lines will be displayed on your screen.

/M Monochrome display - This parameter will display the utility screens in black and white.

/K Keyboard only mode - If this parameter is used, the computer will not support the use of a mouse device even if one is present. The default is to support a mouse if its driver is loaded in memory.

/N Non-target modeling mode - This parameter runs the utility in non-target modeling mode. When you run this utility, the configuration which is stored in the system configuration information (SCI) file named SYSTEM.SCI is displayed. When the configuration is saved, it is normally saved to the SYSTEM.SCI file. However, with non-target modeling mode, you can create an SCI file for a computer other than the one on which you are running the utility, create multiple SCI files, and create one SCI file for multiple computers.

/T Detailed view by slot - This parameter causes the default view to be detailed by slot instead of overview.